

DEPARTMENT OF THE ARMY
HEADQUARTERS, WALTER REED ARMY MEDICAL CENTER
6900 Georgia Avenue, NW
Washington, DC 20307-5001

EC-1 Nursing Policy

21 July 2005

Radioactive Materials and Patient Care

1. Purpose: Establish guidelines for the care of patients receiving therapy with radioactive materials.

2. Scope: Applies to nursing personnel involved in the care of patients receiving therapeutic doses of radiation.

3. References:

a. Title 10 Code of Federal Regulations Parts 19 (Notices to workers) 20 (Radiation Protection Standards) and 35 (Medical Use of By-Product Material).

b. US Nuclear Regulatory Commission Reg Guides 8.13 (Instructions Concerning Prenatal Radiation Exposure), 8.29 (Instructions to Workers), 8.39 (Release of Patients Administered Radioactive Materials), and 10.8 (Radiation for Medical Uses).

c. National Council of Radiation Protection and Measurement publication #37: Management of Patients Receiving Therapeutic Doses of Radionuclides.

d. Dunne-Daly, C.F. (1994). Programmed instruction: Radiation Therapy. Education and Nursing Care of Brachytherapy Patients. Cancer Nursing, 17(15):434-45.

e. WRAMC Infection Control Manual.

f. AR 40-14, Control and Recording Procedures for Exposure to Ionizing Radiation and Radioactive Materials. 30 June 1995.

g. DA PAM 40-18, Personnel Dosimetry Guidance & Dose Recording Procedures For Personnel Occupationally Exposed To Ionizing Radiation. 30 June 1995.

h. WRAMC Reg 40-10, Health Physics. 2 June 1999.

4. Procedure. Emergency/Death: In the event of an emergency (i.e. cardiac arrest, emergency surgery, etc.) render any required care immediately. Health Physics Office (HPO) personnel are available 24 hours a day and should be notified as soon as feasible at 202-356-0058. The attending physician should be notified as soon as

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possible. HPO should also be notified in the event of the patient's death, and before preparing the body for transport or autopsy.

a. Oral Iodine-131 Therapy (Ward 75)

1) General: This therapy involves the ingestion of Iodine-131 for the treatment of functional thyroid cancer and hyperthyroidism. Any isotope not retained by the thyroid gland is excreted primarily in the urine, sputum and perspiration. Iodine-131 decays with a radiological half-life of eight days while being simultaneously excreted, therefore the average effective half-life is about 12 hours. Patients and nursing staff will be briefed about general radiation protection techniques by health physics personnel prior to administration of the radio-iodine. General information and HPO points of contact will be posted on the door of the room.

2) Procedure:

a) Thermoluminescent Dosimeters (TLDs) will be furnished by the Health Physics Office to all nursing personnel caring for radioiodine patients. TLDs will be returned to the designated storage location at the end of the shift or when no patient is present on the ward.

b) The principles of ALARA (As Low As Reasonably Achievable) will be practiced at all times when dealing with the patient. This includes spending the minimum amount of time with the patient, keeping the maximum amount of distance from the patient as is consistent with quality nursing care and using the shielding devices placed in the room. Lead aprons such as those worn in the Radiology Department are not effective in shielding iodine-131.

c) All personnel entering the room, crossing the designated hot-line on the floor inside the doorway will wear shoe covers and non-sterile disposable gloves when caring for the patient. The shoe covers and gloves will be discarded in the radiological waste container in the patient's room.

d) Personnel should care for the patient on a rotating basis to minimize exposure to any one individual.

e) Pregnant women will notify their supervisor and the HPO to enter the WRAMC pregnancy surveillance program.

f) The patient will not cross the hot-line or leave the room until released by the HPO. Any departure, except for emergency reasons, requires the approval of the health physics personnel. Under normal conditions the patient will be self sufficient, thus nursing staff should not need to cross the designated hot-line on the floor inside the doorway.

g) Excretions, perspiration and vomitus from the patient are radioactive. Spills within the room should be cleaned by the patient if possible. The health physics office should be notified immediately of any spill or unusual occurrence.

h) Soiled linen should be changed by the patient and placed in the designated container in the patient's room. Additional containers for food waste and general trash are also provided in the patient's room.

i) Non-disposable items for patient care (i.e. blood pressure cuff and stethoscope) should be dedicated to the room and remain in the room between patients. These items should be labeled as reserved for radioiodine use. If necessary these items may be decontaminated by health physics personnel or decayed to unrestricted release levels after about 3 months and returned.

j) Disposable eating utensils and trays will be used by the patient.

k) Blood, urine or other bodily fluid samples will not be obtained without prior approval of the health physics office.

l) Non-ambulatory patients are rare and will be dealt with on a case by case basis. Coordination among the attending physician, nuclear medicine, the Nursing Section Supervisor, Ward Head Nurse, and the Health Physics Office will normally be conducted by the health physics personnel.

m) Housekeeping staff are not allowed into the room for any reason during a therapy or until the room has been released back to the ward from the Health Physics Office.

n) All personnel who enter the patient's room are required to sign the visitor's logbook posted outside the room.

3) Visitors Policy:

a) Visitors will stay behind the designated hot line indicated by the tape on the floor inside the patient's room.

b) Children under age 18 are not allowed to visit the patient without written permission of the Health Physics Office.

c) Visits will be limited to the time posted near the door of the patient's room.

d) Visitors will not touch the patient or patient items.

e) Visitors will not, under any circumstances, use the patient's bathroom.

4) Housekeeping Requirements:

a) Housekeeping personnel will not enter the patient's room until it has been released for unrestricted use by the HPO.

b) The room will be cleaned IAW WRAMC Infection Control Procedures by the Health Physics Office.

c) All waste and linen will be collected by the HPO and held for decay prior to being released.

5) Patient Activity Restrictions: Patients are not allowed to leave the room until released by the HPO except in emergency situations.

6) Areas Adjacent to Therapy Rooms. Rooms and beds surrounding therapy rooms (including the interstitial floors) are monitored by HPO at the start of each therapy. In the event the dose rates in these areas are above the federal limits for the general public, the area may be restricted from patient occupancy. Any such areas will be posted by health physics personnel and access will be restricted. Areas not posted are available for unrestricted use. Questions regarding room closures should be directed to the Health Physics Office.

c. Radiopharmaceutical Therapy or Imaging

1) General: Radiopharmaceuticals may be injected or administered to patients for therapeutic purposes, gamma guided surgery or imaging studies.

2) Thermoluminescent Dosimeters (TLDs) and external shielding are not normally required for care of these patients outside the nuclear medicine clinic.

3) Special precautions may required for urine, vomitus, stool, blood or other bodily tissues or fluids. Contact the HPO for assistance with the cleanup or disposal of any regulated medical wastes that may be contaminated with radioactive materials.

4) Nuclear Medicine personnel will assist with the initial surgical dressing change.

5) When handling surgical dressings, gloves must be worn throughout the procedure. All items that may be contaminated with radioactive materials must enter the radioactive materials waste stream.

6) If there is any evidence of leakage from the injection or surgical site, the attending nuclear medicine physician and the Health Physics Office are to be notified immediately.

7) When dressings with leakage are removed, the dressing and any other possibly contaminated materials should be placed in a separate bag for disposal by the Health Physics Office.

8) The patient may ambulate outside the room provided there is no leakage from the injection or surgical site.

9) Linen may be handled routinely provided it is not contaminated by injection site leakage. If linen is contaminated by leakage, gloves are to be worn during changes and the soiled linen is to be placed in a separate plastic bag for disposal by the Health Physics Office.

10) Visitors should not touch or handle the patient's surgical dressing or clothing.

11) There are no restrictions on housekeeping activities.

d. Temporary Brachytherapy Implants (Ward 65)

1) General: Temporary brachytherapies are the temporary implant of sealed radioactive sources, usually cesium-137 or iridium-192. These sources vary in appearance and design, but most commonly are: cylindrical steel seeds approximately 2 centimeters long and 3-4 millimeters in diameter, tiny seeds imbedded in a plastic ribbon or mesh, short pieces of gold or silver wire, and in rare cases, the sources are in the shape of long thick needles. General information regarding the specific source in use will be posted on the door to the patient room. These implants are usually used to treat cervical cancer, uterine cancer or soft tissue sarcomas in addition to traditional external beam therapy or in cases when other types of radiation therapy would not be effective or desirable.

2) Procedure:

a) All nursing personnel caring for the brachytherapy patients will wear a thermoluminescent dosimeter (TLD) supplied by the Health Physics Office. TLDs will be kept in the designated storage location when off duty or when no patient is present.

b) The principles of ALARA (As Low As Reasonably Achievable) will be practiced at all times when caring for the patient. This includes spending the minimum amount of time with the patient, keeping the maximum distance from the patient as is consistent with quality nursing care and using the lead shields placed around the patient's bed to protect personnel from unnecessary exposure. Lead aprons such as those worn in radiology are normally not effective in shielding the energy from brachytherapy sources.

c) Personnel should organize supplies prior to providing care to minimize time in the room.

d) Personnel should care for the patient on a rotating basis to minimize exposure to any one individual.

e) Pregnant women will notify their supervisor and the HPO to enter the WRAMC pregnancy surveillance program.

f) If the implant becomes dislodged, **DO NOT HANDLE THE RADIATION SOURCE WITH YOUR HANDS**: Call the Radiation Oncology Team and Health Physics Office immediately. If the source(s) are in close proximity to the patient use the long (12 inch) forceps to pick up the sources and place them near the lead container in the corner of the room. Record the time of discovery of the dislodged source(s).

3) Visitor's Policy: Visitors will stay behind the designated hot line indicated by the tape on the floor of the patient's room.

4) Children under the age of 18 are prohibited without written permission of the Health Physics Office. Visits will be limited to the time posted on the door by the Health Physics Office.

5) Housekeeping requirements: Housekeeping personnel will not enter a brachytherapy room until after the radioactive source has been removed from the patient.

6) Patient Activity Restrictions: Brachytherapy implant patients will not ambulate outside the room. A patient's authorization to ambulate within the shielded area or alter body position will be prescribed specifically by the Radiation Oncology team on a case-by-case basis. Some patients may be allowed to move about within the room as determined by the physician and the Health Physics Office. These patients are not allowed to leave the room.

7) Training Requirements: Training is required for all personnel before working with radioactive materials. Formal training will be provided by the Health Physics Office on an annual basis. Supplementary and interim training can be scheduled at any time by calling the Health Physics Office.

8) Areas Adjacent to Therapy Rooms: Rooms surrounding therapy rooms (to include the interstitial floors) are monitored by HPO at the start of each therapy. In the event the dose rates are above the federal limits for the general public, the areas will be posted by health physics personnel and access will be restricted. Areas not posted are available for unrestricted use. Questions regarding room closures should be directed to the Health Physics Office. Room 6561 will not be used as a patient room during a therapy without the prior consent of the HPO.

9) Information sheets appropriate to each therapy will be posted on the door of each patient's room.

10) Issues encountered while providing nursing care should be directed to the nursing section chief or evening/night supervisor.

11) Any issues or concerns related to radioactive materials should be directed to the Health Physics Office. Health physics personnel are on duty 24 hours.

e. Permanent Brachytherapy Implants (Ward 65)

1) General: Permanent brachytherapies are the implant of sealed radioactive sources, usually iodine-125 or paladium-103 for the treatment of prostate cancer. These sources are cylindrical steel seeds approximately 0.5 centimeters long and 0.8 millimeters in diameter.

2) Procedure:

a) Nursing personnel caring for these brachytherapy patients do not require a thermoluminescent dosimeter (TLD).

b) All seeds must be accounted for while the patient is on WRAMC property. It is very important that any seeds that are passed through the urine or implant site be secured by the Health Physics Office. The urine bag, bedding, trash and patients room must be surveyed by the Health Physics Office before anything leaves the patient's room.

c) Lead aprons such as those worn by radiology are not necessary in the care of these patients.

d) Pregnant women will notify their supervisor and the HPO to enter the WRAMC pregnancy surveillance program.

e) If a seed becomes dislodged from the patient, **DO NOT HANDLE THE RADIATION SOURCE WITH YOUR HANDS**. Use the tweezers or forceps to pick up the source and place it in the lead container in the patient's room. Notify the Health Physics Office immediately.

3) Visitor's Policy: There are no restrictions on visitors.

4) Housekeeping requirements: Housekeeping personnel will not enter a permanent brachytherapy room until the patient has been discharged and the room has been surveyed by the HPO. These rooms are not posted by the HPO and it is the ward's responsibility to ensure the room is closed to housekeeping personnel until cleared by the HPO.

5) Patient Activity Restrictions: Permanent brachytherapy implant patients are permitted to ambulate outside the room.

6) Training Requirements: Training is required for all personnel before working with radioactive materials. Formal training will be provided by the Health Physics Office on an annual basis. Supplementary and interim training can be scheduled at any time by calling the Health Physics Office.

7) Information sheets appropriate to each therapy will be posted on the door of each patient's room.

8) Issues encountered while providing nursing care should be directed to the nursing section chief or evening/night supervisor.

9) Any issues or concerns related to radioactive materials should be directed to the Health Physics Office. Health physics personnel are on duty 24 hours.

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